REPORT OF THE BENEFITS WORKING GROUP APPENDIX A

A.1 Introduction

This appendix summarizes the deliberations of the National Drinking Water Advisory Council's (NDWAC's) Benefits Working Group. This group involved a wide variety of stakeholders, including utility company staff, environmentalists, health professionals, state water program staff, an elected official, economists, and members of the general public. Over the course of two meetings and two teleconferences during 1998, the Benefits Working Group discussed issues that arise in developing a new framework for evaluating the benefits of proposed drinking water regulations. This framework is being created by EPA's Office of Ground Water and Drinking Water (OGWDW) as part of the Office's efforts to implement the 1996 Safe Drinking Water Act (SDWA) amendments. The amendments require that EPA fully consider both quantifiable and non-quantifiable benefits that accrue as a result of drinking water regulations, and compare the benefits with the projected costs of the regulations.

The Benefits Working Group was charged with reviewing those quantifiable and non-quantifiable benefits that could be considered when developing drinking water regulations and provide recommendations to the Agency on which benefits should be evaluated in developing its regulations. In addressing the charge, the group considered the following questions:

1. What categories of benefits (qualitative and non-qualitative) should EPA routinely consider in the process of developing its drinking water regulations?

2. How (specifically) should EPA consider qualitative (non-monetizable) benefits in its rulemaking process?

3. How should EPA ultimately compare the results of its benefits evaluations with its cost analysis when developing drinking water regulations?

Numerous other questions and issues pertaining to benefits assessment were also raised for group discussion. Recommendations developed by the Benefits Working Group were presented to NDWAC on November 17, 1998.

This appendix: (1) lists the participants in the Benefits Working Group; (2) provides its recommendations as approved by NDWAC; and (3) includes the report it prepared on its deliberations. Additional information on the activities of the group (including meeting notes and handouts) is available from OGWDW staff.

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A.3 NDWAC Benefits Analysis Recommendations

On November 17, 1998, the National Drinking Water Advisory Council (NDWAC) approved a series of recommendations for EPA's Office of Ground Water and Drinking Water to consider in its analysis of the benefits of proposed regulations. These recommendations were based upon a report from the NDWAC Benefits Working Group.

The National Drinking Water Advisory Council (NDWAC) recommends that:

(1) EPA should focus its benefits analysis efforts primarily on assessing effects on human health, defining these effects as clearly as possible and using the best available data to value them. It is also recommended that EPA should also consider, where appropriate, taste and odor improvements, reduction of damage to water system materials, commercial water treatment cost reductions, benefits due to source water protection (e.g., ecological benefits and non-use benefits), and benefits derived from the provision of information on drinking water quality (e.g., a household's improved ability to make informed decisions concerning the need to test or filter tap water);

(2) EPA should devote substantial efforts to better understanding the health effects of drinking water contaminants, including the types of effects, their severity, and affected sensitive subpopulations. Better information is also needed on exposures and the effects of different exposure levels, particularly for contaminants with threshold effects. These efforts should pay particular attention to obtaining improved information concerning impacts on children and other sensitive populations;

(3) EPA should clearly identify and describe the uncertainties in the benefits analysis, including descriptions of factors that may lead the analysis to significantly understate or overstate total benefits. Factors that may have significant but indeterminate effects on the benefits estimates should also be described;

(4) EPA should consider both quantified and non-quantified benefits in regulatory decision-making. The information about quantified and non-quantified (qualitative) benefits should be presented together in a format, such as a table, to ensure that decision-makers consider both kinds of information;

(5) EPA should consider incremental benefits and costs, total benefits and costs, the distribution of benefits and costs, and cost-effectiveness in regulatory decision-making. This information should be presented together in a format, such as a table, to ensure its consideration by decision-makers;

(6) Whenever EPA considers regulation of a drinking water contaminant, it should evaluate and consider, along with water treatment requirements to remove a contaminant, source water protection options to prevent such a contaminant from occurring. The full range of benefits of those options should be considered.

A.4 Benefits Working Group

Report to the National Drinking Water Advisory Council

Charge to the Benefits Working Group

The specific charge for the Benefits Working Group was to *"consider the range of quantifiable and non-quantifiable benefits that could be considered when developing drinking water regulations and provide recommendations to the Agency on which benefits should be routinely considered in developing its regulations."* Questions to be addressed by the Working Group in carrying out the charge follow:

- What categories of benefits (both qualitative and quantitative) should EPA routinely consider in the process of developing its drinking water regulations?

- How (specifically) should EPA consider qualitative (non-monetizable) benefits in its rulemaking process?

- How should EPA ultimately compare the results of its benefits assessments with its cost analysis when developing drinking water regulations?

Summary of Benefits Working Group Recommendations

Recommendation #1: Categories of Benefits

The Working Group identified six categories of benefits that can result from drinking water regulations: (1) health risk reductions; (2) taste and odor improvements; (3) reduction of damage to water system materials; (4) commercial water treatment cost reductions; (5) benefits due to source water protection (e.g., ecological benefits and non-use benefits); and (6) benefits derived from the provision of information on drinking water quality (e.g., a household's improved ability to make informed decisions concerning the need to test or filter tap water). The members agreed on the following recommendation:

- EPA should focus its benefits analysis efforts primarily on assessing effects on human health, defining these effects as clearly as possible and using the best available data to value them.

Recommendation #2: Assessing Health Risks and Valuing Benefits

The analysis of health risks is central to EPA's ability to establish the appropriate MCLG and to assess the benefits of alternative levels for the MCL. The Benefits Working Group discussed several concerns related to the valuation of health benefits, and agreed on the following recommendation:

- EPA should devote substantial efforts to better understanding the health effects of drinking water contaminants, including the types of effects, their severity, and affected sensitive subpopulations. Better information is also needed on exposures and the effects of different exposure levels, particularly for contaminants with threshold effects. These efforts should pay particular attention to obtaining improved information concerning impacts on children and other sensitive populations.

Recommendation #3: Addressing Uncertainty

The Benefits Working Group discussed several concerns related to addressing uncertainty in benefits analysis, and agreed on the following recommendation:

- EPA should clearly identify and describe the uncertainties in the benefits and costs analysis, including descriptions of factors that may lead the analysis to significantly understate or overstate total benefits and costs. Factors that may have significant but indeterminate effects on the benefits and costs estimates should also be described.

Recommendation #4: Addressing Non-Quantified Benefits

The Benefits Working Group discussed several issues related to addressing non-quantified benefits, and agreed on the following recommendation:

- EPA should consider both quantified and non-quantified benefits in regulatory decision-making. The information about quantified and non-quantified (qualitative) benefits should be presented together in a format, such as a table, to ensure that decision-makers consider both kinds of information.

Recommendation #5: The Presentation of Information on Benefits and Costs

The Benefits Working Group discussed a number of issues related to the presentation of information on benefits and costs, and agreed on the following recommendation:

- EPA should consider incremental benefits and costs, total benefits and costs, the distribution of benefits and costs, and cost-effectiveness in regulatory decision-making. This information should be presented together in a format, such as a table, to ensure its consideration by decision-makers.

Recommendation #6: Source Water Protection Options

The Benefits Working Group discussed several issues related to addressing increasing source water protection, and agreed on the following recommendation:

- Whenever EPA considers regulation of a drinking water contaminant, it should evaluate and consider, along with water treatment requirements to remove a contaminant, source water protection options to prevent such a contaminant from occurring. The full range of benefits of those options should be considered.

Background and Overview of Working Group Discussions

The Benefits Working Group was established to help shape how EPA should best meet the new benefits analysis requirements that are specified in the 1996 SDWA amendments, as new program regulations are developed over the next few years. Since its inception, EPA has performed benefits analysis, usually as part of a benefit/cost analysis, as one of many sources of information on the potential effects of its regulations. EPA views benefit/cost analysis as a method to organize information in a way that informs the decision. These analyses may contain significant uncertainty and provide only one perspective on the merits of alternative policy choices. Other types of analysis are needed to address concerns about equity, for example.

Several statutes, Presidential Executive Orders, and guidance documents govern the conduct of benefit/cost and related regulatory analyses at EPA. Benefit/cost analyses undertaken by Federal agencies are expected to adhere to "best practices" as defined by the economics profession. Federal agencies must also address several specific concerns related to imposing costs or other burdens on private industry, state and local government, and other entities, such as avoiding unfunded mandates or requirements that are particularly burdensome for small businesses or local government. Other government-wide requirements focus on protecting certain groups of potentially affected individuals, such as minorities, low income populations and children. In the case of drinking water regulations, SDWA also contains several requirements related to the performance of benefit/cost analysis and its use in decision-making.

I. Categories of Benefits

A. Background

Most drinking water regulations promulgated under SWDA focus on establishing the maximum allowable concentration of a particular contaminant (or group of contaminants) for drinking water supply systems used by the public. For these types of regulations, the "costs" of the standards generally include expenditures on monitoring and treatment (or, in some cases, source water protection) and related market impacts such as the effects on water price increases. The "benefits" include the effects of reducing the concentration of the contaminants in drinking water. Drinking water regulations may also increase the availability of information on water quality.

In 1997, EPA conducted a detailed review of the potential benefits of drinking water regulations, as reported in "*Valuing Drinking Water Quality: Theory, Methods, and Research Needs."* Based on this research, EPA identified four major categories of benefits that may warrant routine consideration for individual rules:

- Reduced health risks, including decreased risks of premature death, illness or other health impacts.

- Improved aesthetic qualities, including tap water taste, odor, and appearance.

- Reduced damages to materials, primarily related to reduced corrosion of water system piping and equipment.

- Improved qualities for commercial and industrial use, for example, in cases where contaminants would adversely affect production processes if not removed by the water supplier.

While effects on health risks are assessed for most drinking water regulations, many of the other categories are considered only when relevant to a particular contaminant. For example, many contaminants do not affect the taste, odor, or appearance of tap water. In addition, some drinking water regulations will address categories not directly included in the above list. For example, regulations requiring increased source water protection may have ecological benefits, such as enhanced recreational fishing and bird-watching opportunities due to improved productivity of the fish and wildlife stock.

B. Working Group Discussion Overview (Recommendation #1: Categories of Benefits)

A key question raised by EPA for the Benefits Working Group was "what categories of benefits should EPA routinely consider in the process of developing its drinking water regulations?" EPA asked the Working Group members to review the potential benefits categories described above, both to determine whether EPA has excluded important categories and to identify which categories are most important to formally assess and quantify. In response to this request, the Working Group identified six categories of benefits that can result from drinking water regulations: (1) health risk reductions; (2) taste and odor improvements; (3) reduction of damage to water system materials; (4) commercial water treatment cost reductions; (5) benefits due to source water protection (e.g., ecological benefits and non-use benefits); and (6) benefits derived from the provision of information on drinking water quality (e.g., a household's improved ability to make informed decisions concerning the need to test or filter tap water). The members agreed on the following recommendation:

- EPA should focus its benefits analysis efforts primarily on assessing effects on human health, defining these effects as clearly as possible and using the best available data to value them.

During the group's discussions of potential benefits categories, the following points were mentioned by at least one member of the group as important considerations for EPA.

- When assessing health-related benefits, EPA should ensure that adequate attention is paid to impacts on vulnerable groups (e.g., children, pregnant women, the elderly, individuals with immune deficiencies, Native Americans). Additional research (and funding) is needed to better understand and value these impacts.

- Benefits categories other than health should be considered in cases where they may affect EPA decision-making, e.g., if the benefits are likely to be significant or if consideration of the benefit category could influence the selection of the MCL.

- The analysis should consider both positive and negative changes in each benefit category.

- EPA should consider all relevant benefits categories in its decision-making regardless of whether the benefits are quantified or valued. However, some members of the group expressed concern that EPA may overemphasize the value of assessing benefits other than health effects.

- Some of the benefits that would be derived from a decrease in health problems for children include less time lost from school, less parental time lost from work, and less family disruption. Children also have more potential years of life to lose, and their earning potential could be affected.

- EPA should conduct retrospective analysis to assess the extent to which predicted benefits are consistent with the actual benefits realized.

- Working Group members agreed that at least six categories of benefits result from drinking water regulations. Of the six, four categories of benefits result from drinking water treatment improvements: health risk reductions, taste and odor improvements, materials damage reduction (of water systems), and commercial water treatment cost reductions. The other benefits categories arise from source water protection efforts and the provision of information on drinking water quality.

II. Methods for Assessing Health Risks and Valuing Benefits

A. Background

A.1 Assessing Health Risks

EPA requires information on health risks to establish the MCLG, and to assess the benefits of establishing the MCL at or above the "feasible" level. The MCLG is generally set at "zero" for contaminants that pose risks of physiological damage at all doses (i.e., nonthreshold toxicants, including most carcinogens). For threshold toxicants, the MCLG is generally set at the level where there are no observable effects (with a margin of safety).

To estimate the risks associated with particular contaminants, EPA may derive information from epidemiological studies of human populations or from animal studies. Epidemiology generally involves developing statistical relationships between estimates of exposure and the incidence of health effects. The advantage of these studies is that they use data on human effects; the disadvantage is that the results of some studies can be difficult to interpret because of confounding factors such as exposure to other contaminants, and may not provide an understanding of the physiological basis for the effect. Data from animal studies address confounding

factors by using a controlled environment, but may be difficult to translate into human terms.

A.2 Methods for Valuing Benefits

From the perspective of economic theory, the appropriate measure of value is willingness to pay for the benefits. Willingness to pay is the maximum amount of money an individual would voluntarily exchange to acquire something or obtain an improvement (e.g. in drinking water quality). An individual's willingness to pay necessarily includes that individual's ability to pay because the resources available to any individual are limited. An individual may wish to pay more than the total value of the resources available to him or her, but economic willingness to pay is limited to that amount the individual can actually allocate for the benefit in question. Because "improved drinking water quality" is not directly bought and sold in the marketplace, information on willingness to pay must be derived from the markets for related goods or from surveys or similar data collection efforts. The particular methods used vary depending on the benefit category assessed. Below, we discuss the approaches used for the major benefit categories discussed by the Working Group: reduced mortality risks, reduced morbidity risks, avoided damages to materials, and effects on commercial and industrial water use.

A.2.1 Valuing Mortality Risks

Drinking water regulations may decrease the risks of contracting a potentially fatal disease, such as certain cancers. The most commonly used approach for valuing these changes in mortality risk focuses on the "value of a statistical life." This term refers to the value of relatively small changes in the risk of death among a population. For example, if 100,000 people are each willing to pay $100 to reduce their own risk of death by 1 in 10,000, then as a group their willingness to pay for a program that would save 10 lives in the population is $10 million, or $1 million per statistical life. This value refers to the sum of individuals' willingness to pay for risk reductions. Presently, the value of statistical life most often used in EPA regulatory analyses includes a best estimate of $5.8 million (in 1997 dollars) per statistical life saved, with a lower bound of $0.7 million and an upper bound of $16.3 million. These values are derived from 26 studies, including 21 wage-risk studies and five contingent valuation studies, and have been subject to substantial peer review.

While this range of values provides the best estimates currently available, applying this range has several limitations. First, there are many differences between the risks addressed by the available studies and the risks associated with environmental regulations. The studies address risks that are incurred voluntarily, and that often accrue from accidents rather than lingering illnesses. Second, drinking water regulations may also affect people with different demographic characteristics than

those studied, e.g., different age or income groups, or people whose initial health condition differs.

A.2.2 Valuing Morbidity Risks

The contaminants addressed by drinking water regulations can cause a variety of illnesses, including acute illness, nonfatal cancers, and other chronic diseases, as well as nonfatal reproductive and developmental effects. The most common approach to valuing morbidity is the cost-of-illness method, which derives values from the medical costs and lost work time associated with an illness. While this approach is relatively easy to understand and implement, it is not a complete measure of willingness to pay. The availability of insurance affects people's willingness to incur these costs, and this approach excludes the value placed on avoiding pain and suffering and reducing the risk of illness. Under most plausible conditions, cost of illness studies understate total willingness to pay, with the degree of understatement varying depending on the nature and severity of the disease. For many health effects, only cost of illness estimates may be available; studies of total willingness to pay have been undertaken for only some of the health effects of concern.

A.2.3 Valuing Other Effects (avoided damages to materials, and effects on commercial and industrial water use)

The other types of benefits likely to be considered for drinking water regulations include avoided materials damages (e.g., reduced corrosion) and improved water quality for commercial and industrial use. This latter category focuses on water as an input to production processes rather than its use as drinking water, e.g., for cooling or for mixing with other materials. In either case, the method most commonly used to measure the value of related benefits is to assess avoided costs. This approach considers the costs incurred in the absence of the regulation, and assesses the extent to which these costs would be reduced under alternative regulatory levels. These avoided costs may include expenditures on replacing corroded distribution system piping or industrial equipment, or on additional treatment by an industrial plant prior to use.

B. Working Group Discussion Overview (Recommendation #2: Assessing Health Risks and Valuing Benefits)

The analysis of health risks is central to EPA's ability to establish the appropriate MCLG and to assess the benefits of alternative levels for the MCL. The Benefits Working Group discussed several concerns related to the valuation of health benefits, and agreed on the following recommendation:

- EPA should devote substantial efforts to better understanding the health effects of drinking water contaminants, including the types of effects, their severity, and affected sensitive subpopulations. Better information is also needed on exposures and the effects of different exposure levels, for all populations, and especially vulnerable populations, particularly for contaminants with threshold effects.

During the group's discussion on methods for assessing health risks and valuing benefits, the following points were mentioned by at least one member of the group as important considerations for EPA.

- Affordability tends to be the deciding factor in determining whether a customer is willing to pay for a product. EPA should develop clear affordability criteria; for example, by looking at the percentage of disposable income spent on different goods and services.

- As ability to pay and willingness to pay are constrained by income, other kinds of analyses on equitability should be conducted.

- Consumers view water as a non-discretionary product, not consistent with economic principles. The compelling issue is whether WTP is equated with fairness. Affordability is more closely linked to fairness. EPA should consider the consumer's decision-making process for a non-discretionary product and review the available literature on this topic.

- Affordability pertains to equity concerns and WTP to efficiency concerns. Economics tends to ignore equity. Affordability and ability to pay are important for social issues, but not important for cost-benefit analysis which focuses on the most efficient approach to risk reduction. Affordability and WTP involve separate issues, and should be analyzed separately.

- The effects on vulnerable populations, such as fetuses, infants and children, the elderly and the immunosuppressed should be explicitly evaluated.

- Data on health effects should be derived from careful consideration of the quality of available studies, and additional research should be conducted when needed to refine or expand available data.

- EPA should separately evaluate exposure risks to children and other sensitive subpopulations. In the absence of adequate exposure data for these subgroups, EPA should not simply extrapolate from data on the general population.

- The EPA should develop strong working relationships with other components of the Federal Government involved with the collection and study of health information, such as the National Center for Health Statistics and the National Center for environmental health.

- Working Group members disagree on the use of epidemiological studies. Some argue that these studies should not be used as the sole basis for developing regulations if data are lacking on the cause and effect relationship for a particular contaminant and health effect. Others argue that it is reasonable to use the correlations found in well-conducted epidemiological studies when developing regulations.

- Regardless of the particular benefit being valued, EPA should use well-conducted, unbiased studies to estimate the value. While many high quality studies have been conducted in this area, additional research on these values is still necessary. However, the need to address the more significant uncertainties in the health risk data should be a higher priority for EPA.

- EPA should ensure that the approach to valuing morbidity addresses all elements of willingness to pay (not just medical costs), but care should be taken to ensure that the resulting values are not overstated due to difficulties in obtaining estimates for components of willingness to pay such as pain and suffering.

- EPA should support and conduct research to adapt existing methods so that they can be applied to valuing mortality and morbidity risks to children, pregnant women, those with preexisting chronic diseases and the elderly, rather than relying on estimates developed for adults when considering these effects. In considering these groups, one should value the costs to not only the individual involved but to others in their family/social group as well. A problem in a child usually involves not only the loss of the child's time from school but the parents' time from work. In the case of those with preexisting chronic disease or the elderly, there is often some third party who must also be involved in taking the individual to the doctor or for other services. Most of these costs should be measurable.

III. Methods for Addressing Uncertainty

A. Background

Benefits and costs analyses of drinking water regulations often contain significant uncertainty. The appropriate method for addressing uncertainty depends in part on the source of the uncertainty and on the types of data available. In addition, the method selected will depend on the information needed for decision-making. Simple and inexpensive methods may be adequate for determining appropriate regulatory levels if they clearly support a particular option despite remaining uncertainties (e.g., demonstrate that the benefits analysis clearly supports setting an MCL at the lowest feasible level), or if the value of additional information is outweighed by the costs or time needed to acquire it.

Regardless of the method chosen, EPA believes that uncertainties in the analysis must be clearly stated, with a discussion of the implications for decision-making. The methods and data used in the analysis should be clearly described and justified. The results of the benefits and costs analysis are often best described as a range of values. Benefits and costs that are not quantified, or that are quantified but not assigned a monetary value, also should be included in the presentation of results.

B. Benefits Working Group Discussion Overview (Recommendation #3: Addressing Uncertainty)

The Benefits Working Group discussed several concerns related to addressing uncertainty in benefits analysis, and agreed on the following recommendation:

- EPA should clearly identify and describe the uncertainties in the benefits and costs analysis, including descriptions of factors that may lead the analysis to significantly understate or overstate total benefits and costs. Factors that may have significant but indeterminate effects on the benefits and costs estimates should also be described.

During the group's discussion on methods for addressing uncertainty, the following points were mentioned by at least one member of the group as important considerations for EPA.

- Presentations of quantitative results should be combined with discussions of any benefits that were not quantified or monetized.

- EPA should strive to reduce the uncertainties in health effects studies and exposure data.

- Members disagree about the level at which the MCL should be set in cases where the remaining uncertainty in the analysis does not clearly argue for a particular level. Some believe a stringent level should be

selected to be protective, while others argue that a less stringent level is desirable to avoid imposing potentially unwarranted costs.

IV. Cost-benefit Analysis and Qualitative (Non-quantified) Benefits: the Presentation of Information

A. Background

Drinking water regulations often may have benefits that cannot be easily quantified or valued. In some cases, the inability to quantify benefits stems from the status of the underlying scientific research. For example, available studies in the health science literature may suggest that a contaminant is associated with a particular illness, but may not provide data on the relationship between changes in exposure and changes in the incidence of the illness. As a result, it may not be possible to quantify the changes in risk associated with different MCLs (e.g., to determine the number of cases avoided) nor may it be possible to value, in dollar terms, these changes in risk. In other cases, the lack of quantification may result from the need to focus limited time and resources on the most significant issues; EPA may not be able to fund studies of less significant effects especially if they require the use of expensive research techniques over long time periods.

EPA and OMB guidance requires the consideration of non-quantified effects in regulatory analyses, and SDWA explicitly notes that non-quantified benefits should be weighed in determining the appropriate MCL. Information on these effects can be discussed qualitatively using text and graphics to indicate their possible importance in terms of incidence and dollar value. In addition, analysts can use breakeven analysis or measures of cost-effectiveness to provide information on the relationship of the non-quantified effects to the quantified costs and benefits. For example, analysts can indicate the number of cases that would need to be avoided, or the dollar value per case that would be needed, for the total benefits to equal the total costs associated with alternative MCLs.

B. Benefits Working Group Discussion Overview (Recommendation #4: Addressing Non-Quantified Benefits; also Recommendation #5: The Presentation of Information on Benefits and Costs)

The Benefits Working Group discussed several issues related to addressing non-quantified benefits, and presenting information on costs and benefits, and agreed on the following two recommendations:

- EPA should consider both quantified and non-quantified benefits in regulatory decision-making. The information about quantified and non-quantified (qualitative) benefits should be presented together in a format, such as a table, to ensure that decision-makers consider both kinds of information.

- EPA should consider incremental benefits and costs, total benefits and costs, the distribution of benefits and costs, and cost-effectiveness in regulatory decision-making. This information should be presented together in a format, such as a table, to ensure its consideration by decision-makers.

During the group's discussion of qualitative information, the following points were mentioned by at least one member of the group as important considerations for EPA.

- Information on potential benefits should be presented even in cases where the available evidence is weak or contradictory, to ensure that decision-makers weigh all available information in establishing regulatory levels.

- This information should include calculation of breakeven points or similar measures to indicate the extent to which the non-quantified effects may bridge the gap between costs and benefits, in cases where quantified benefits are less than quantified costs.

- The analysis should clearly indicate the areas where additional research is needed, and explicitly discuss the limitations and uncertainties in the available data. Where possible, additional research should be conducted to increase EPA's ability to quantify the potential benefits of alternative MCLs.

- When health effects cannot be quantified (e.g., the change in risks or in number of cases cannot be determined from available data), EPA should not attempt to assign dollar values to these effects. Monetizing these effects may mask the gaps in the data and is not likely to provide credible results.

V. Consideration of Source Water Protection Options

A. Background

Although the Working Group's main charge was to consider methods for assessing benefits, many members felt that EPA's focus on the process for selecting among alternative MCLs (i.e., on treatment) was too narrow. The members believe that EPA should be considering a wider range of options for addressing contaminants in water supplies. The Working Group indicated that it is particularly important for EPA to focus more attention on options for source reduction, and developed the recommendation discussed below.

B. Benefits Working Group Discussion Overview (Recommendation #6: Source Water Protection Options)

The Benefits Working Group discussed several issues related to addressing increasing source water protection, and agreed on the following recommendation:

- Whenever EPA considers regulation of a drinking water contaminant, it should evaluate and consider, along with water treatment requirements to remove a contaminant, source water protection options to prevent such a contaminant from occurring. The full range of benefits of those options should be considered.

During the group's discussion, the following points were mentioned by at least one member of the group as important considerations for EPA.

- EPA should consider the full range of regulatory and non-regulatory approaches available for addressing drinking water contamination, including improving public education, issuing health advisories, and providing bottled water or filters for household use, as well as protecting water sources from contamination (e.g., cleaning up industrial sites which are contributors to drinking water contamination).

- Approaches to addressing drinking water contamination, other than establishing an MCL or treatment technique, may maximize benefits and/or lower costs.

- The protection of wetland habitats should be considered, as well as point source reduction.

VI. Additional Issues

During the group's discussion of various issues, the following points, which related to additional issues, were mentioned by at least one member of the group as important considerations for EPA.

- EPA should place additional emphasis on ensuring racial and economic diversity when involving stakeholders in its work groups, including more members of minority and low income groups and Indian tribes. Other Working Group members disagreed with this.

- Affordability, for both households and water systems, should be an important consideration in determining appropriate regulatory levels or alternative technologies.

- The effect of contaminants on sensitive subpopulations should be a key consideration in establishing the MCLG and MCL for threshold toxicants.

- EPA should improve communication regarding the risks associated with drinking water contaminants by working with local public health departments, state public health departments, state and elected officials, regional offices, grassroots organizations, and local communities, including families and health care providers. EPA should develop clearer information on scientific findings, and improve access to this information through the World Wide Web and other media.

- EPA should ensure that regulatory requirements to monitor for the presence of contaminants in drinking water take into account both the costs and benefits of the monitoring effort. In addition, EPA should compile monitoring data in an accessible, computerized format that supports ready analysis of exposure to contaminants, related health risks, and the potential benefits of proposed regulations.